

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-16 are pending, and claims 1 and 10 are independent.

Claim Objections

Claims 4 and 10 have been objected to for alleged informalities. The Examiner is directed to amended claims 4 and 10, which address the Examiner's objection. Thus Applicant respectfully requests that the Examiner reconsider and withdraw the objections to the claims.

Drawing Objections

Figures 3 to 7 have been objected to for allegedly unacceptable shading. The Examiner is directed to the attached replacement sheets, each labeled "Replacement Sheet", for Figures 3 to 7 where an attempt has been made to improve the shading to conform with 37 C.F.R. § 1.84(m) with contours for clarity, and with the label conforming with 37 C.F.R § 1.84(c). Applicant directs the Examiner's attention to 37 C.F.R. § 1.152 (cited by the Examiner), which sets forth conditions for Design Drawings not Utility Application Drawings, which are governed by 37 C.F.R. § 1.84. Likewise 37 C.F.R. § 1.84(m) states: "The use of shading in views is encouraged if it aids in understanding the invention and if it does not reduce legibility." Accordingly Applicant contends that the shading present is needed for understanding the variation of the intensity and thus embodiments of the invention.

Accordingly Applicant respectfully requests withdrawal of the Examiner's objection to the drawings and requests acceptance of all of the drawings.

Rejection Under 35 U.S.C. § 112, First Paragraph

Claims 1-9 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art to make and/or use the invention. This rejection is respectfully traversed.

The Examiner alleges that the optical array of claim 1 "simply rotates each of the plurality of beams through an angle of 90 degrees", and that the optical array allegedly does not integrate the plurality of beams (Office Action, page 3). Applicant contests the Examiner's assertion.

Applicant directs the Examiner's attention to the following sections of the present specification:

[0028] ... instead the optical array 30 can be designed to collimate the laser diode light. ... and a corresponding dove micro-prism 30 is located on the second side 27 of each micro-lens 20. As shown in FIG. 7, the optical elements 30 (e.g. dove micro-prisms) ...(Specification, page 8)

[0029] In an exemplary embodiment the optical element is a dove micro-prism 30 have a general three dimensional trapezoidal shape ... Alternatively there can be a spacing between optical elements 30. ...The array of dove micro-prisms 30 can optically rotate the individual emitter images by a chosen angle (e.g. 90 degrees) ...(Specification, page 9)

Clearly the specification discloses that the optical array can collimate light, and thus is not intended to be limited to optically rotating the individual emitter images. In the specification the terms "exemplary embodiment" and "can" clearly

suggests that such rotation is one of many options intended to fall within the scope of the present invention. One of ordinary skill in the arts would understand that collimating multiple light beams can result in the integration of the light beams.

In view of the above, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. § 112, first paragraph.

Rejection Under 35 U.S.C. § 112, Second Paragraph

Claims 13-16 stand rejected under 35 U.S.C. § 112-second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. This rejection is respectfully traversed.

Applicant directs the Examiner to the sections of paragraphs 28 and 29 stated above. As clearly stated an optical array can be designed to collimate the laser diode light. Since the optical array can have "optical elements 30" clearly microelements (e.g. optical elements) can collimate energy (e.g. light). Therefore claim 13 is supported by the specification. For clarification reasons claim 13 has been amended replacing "microelement" with "optical element." For similar reasons dependent claims 14-16 are supported by the specification.

Although applicants have addressed the outstanding rejection of claims 13-16 and under 35 U.S.C. § 112, second paragraph, by referencing the disclosure, the above discussion should not be relied on to unduly limit the scope of the presently pending claims, which instead should be given their broadest reasonable interpretation.

In view of the above, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections under 35 U.S.C. § 112-second paragraph.

Prior Art Rejections

1. Rejection under 35 U.S.C. § 102 (b) based on Yamaguchi et al.

Claims 10-12 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yamaguchi et al. (U.S. Patent No. 5,513,201). This rejection is respectfully traversed.

Amended claim 10 states:

...a plurality of microlens, wherein each microlens is attached and aligned with one of the plurality of emitters, where each microlens has a microlens height, where the microlens height is less than the accumulated plurality of emitters heights...(emphasis added, Amended Claim 10)

The Examiner refers to Figure 3 of Yamaguchi et al. to allegedly show the features of amended claim 10. Clearly Figure 3 of Yamaguchi et al. fails to show the microlens height relationship to the emitter height stated in amended claim 10 and therefore Yamaguchi fails to show all the features of amended claim 10.

Additionally, Yamaguchi et al. fails to show a “plurality” of microlens 20, Yamaguchi shows a single cylindrical lens 20 (Yamaguchi et al., Figure 3, col. 8, line 3).

With regard to claim 11, the Examiner refers to Yamaguchi et al. (col. 4, line 58 – col. 5, line 13) to allegedly show, suggest, or teach features of claim 11, for example the feature of “a beam with a near circular cross-section.” The referred to sections of Yamaguchi et al. are cited below:

... Therefore, in the laser beams output from the optical path rotating device, component beams from the respective optical elements have the directions corresponding the transverse axis of the emitters rotated by a right angle, that is, as many beams as the optical elements are arranged side by side like the rungs of a ladder. Consequently, the results can be obtained as if the emitters of the linear array semiconductor laser were arranged like the ladder rungs. It is easy to focus the beams in a direction perpendicular to the transverse axis of the emitters, and it is also easy to converge the beams from the parallel emitters lined up like ladder rungs at a very small area. Therefore, a semiconductor laser apparatus which offers effects of substantially arranging the emitters of the linear array semiconductor laser in the form of ladder rungs by using the optical path rotating device of the present invention can concentrate the energy of the linear array semiconductor laser in a very small spot.

Furthermore, the semiconductor-laser-pumped solid state laser apparatus of the present invention has the solid state laser arranged its pumping-light-receiving end face at the focus of the above-mentioned laser beams from the semiconductor laser apparatus (col. 4, ll. 58 – col. 5, ll. 13).

Clearly the Examiner's cited passages fail to show, suggest, or teach "a beam with a near circular cross-section." Thus, Yamaguchi et al. fails to show all features of claim 11. If the Examiner maintains his rejection, Applicant respectfully requests that the Examiner point out the relevant portion of Yagamuchi et al. that shows this feature.

For anticipation under 35 U.S.C. § 102 "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)(M.P.E.P. 2131). For reasons stated above applicants assert that all of the elements of claims 10 and 11 fail to be set forth in the embodiment shown in Yamaguchi et al.

Applicant has already explained why Yamaguchi et al. fails to teach or suggest all the features of claim 10 and 11. Since claim 12 depends on claim 11,

claim 12 is allowable at least for the reasons generally expressed above with respect to claim 11.

In view of the above, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. § 102(b) based on Yamaguchi et al.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the formal objections and rejections to the claims, and the rejections based on prior art. Because all claims are believed to define over prior art of record, Applicants respectfully request an early indication of allowability.

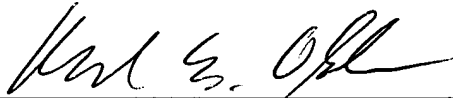
If the Examiner has any questions concerning this application, the Examiner is requested to contact the undersigned at (703) 740-8322 in the Washington, D.C. area.

Atty Docket No. MEMS-0206-US
Appl. No.: 10/716,864
Amdt. dated 8 November 2004
Reply to Office Action of 8 July 2004

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayments to Deposit Account No. 50-3136 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

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Amendments to the Drawings:

The attached sheet of drawings includes changes to Figures 3-7. The attached sheets for Figures 3-7 replace the original sheets containing Figures 3-7. In Figures 3-7 the shading has been changed to conform with 37 C.F.R. § 1.84 (m), and contours added for clarification. Since the change in shading is not a change that can be reflected easily on an annotated sheet, only the replacement sheets are contained herein. Figure 7 has been changed for clarity such that only two of the beam paths are shown. Additionally a minor grammatical reference number correction has been made in Figures 7 and 8, where "6" has been replaced with the correct reference number "36."

Attachment: Replacement Sheets